

21. A method of forming a thin film comprising the step of: forming an AgPdTi alloy thin film using a sputtering target material, the AgPdTi alloy comprising Pd in an amount ranging from 0.1 to 1.5 atomic %, Ti in an amount ranging from 0.1 to 2.9 atomic %, and Cu in an amount ranging from 0.1 to 3.5 atomic %.

22. The method of claim 21, wherein the thin film has a thickness from approximately 500 Angstroms to approximately 1500 Angstroms.

23. The method of claim 21, wherein the wavelength is less than or equal to 650 nm.

24. The method of claim 21, wherein the thin film has a thickness from approximately 500 Angstroms to approximately 1500 Angstroms; and wherein the wavelength is less than or equal to 650 nm.

Remarks

Initially presented were claims 1 to 9, of which claims 1, 3, 5, and 7-9 were independent. Due to a restriction, claims 3-6 and 8-9 were divided out and remain in reserve for a subsequent divisional application, if necessary. Through a series of office actions and responses thereto, the applicants canceled certain claims and added new claims. Now pending are claims 17-24, of which claims 17 and 21 are independent.

Claims 17 and 18 currently stand rejected under section 103 over Hatwar in view of Takeoka. Claims 19 and 20 currently stand rejected under section 103 over Hatwar in view of

Takeoka and in view of Ohno. Claims 21 to 24 currently stand rejected under section 103 over Ohno in view of Takeoka (no Hatwar reference mentioned).

A. Rejection of Claims 17 and 18

Hatwar fails to teach the specific wavelength as it mentions only a specific wavelength of 780 nm, not a range of wavelengths. Certainly, the 780 nm is not within the range recited in the claim. There is no overlap of the single wavelength within the range claimed. This is a different situation than In Re Aller where it was held that routine skill would occur to find optimized ranges from within a disclosed range. Here, that is not present.

Takeoka teaches the cover film 52 to be one of the 17 recited elements, or some combination thereof. First, it only briefly mentions that alloys can be made and certainly does not teach with the specificity necessary to arrive at the claimed proportions. There are too many combinations of the 17 elements to make in a 1 to 1 combination irrespective of varying the constituents by the claimed proportions. The task becomes Herculean when one considers that Takeoka is not limited to two-metal alloys and thus may include two-plus metal alloys up to 17 metal alloys. The proportions of the claimed invention provide unique reflectivity results that are not suggested or taught that can occur from combining any of the 17 elements recited. The allegation of mere skill is required is simply not true given the undue experimentation necessary to arrive at the claimed combination. Differences would have profound consequences on the reflectivity as shown in Hatwar FIG. 2 (showing the profound difference that incremental %'age compositions would have) and Takeoka FIGs. 9 and 10 (showing how thicknesses will significantly vary the signal modulation).

Takeoka specifically teaches that thicknesses matter and that if too thick, the absorption becomes too great and reflectance decreases. So to keep the thickness lower, Takeoka uses gold

film to compensate for the decreased reflectance given that gold has a high reflectance. This teaches away from the claimed invention in that the invention teaches modifying the proportions of non-gold alloys to achieve a desired reflectance. The use of gold is highly undesirable due to its acknowledged cost prohibition. See Hatwar, col. 1, lines 10-40.

Furthermore, Takeoka teaches that in exchange for gold, one can use non gold alloys of a particular type. Takeoka's experiments clearly show a favor to a Te-X-Y where the experiments only change the metal X or metal Y, leaving Te as the desired anchor metal. So, this teaches against using Ag or Pd and then modifying these metal alloys to arrive at a suitable reflectance. Takeoka's experiments clearly show that his approach to a more suitable reflectance is the use of gold, or using a Te-X-Y alloy.

For these reasons, Takeoka is not combinable with Hatwar as they approach different problems using different solutions. See *In Re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from ... the nature of the problem to be solved" indicating that different problems and solutions are strong evidence of nonobviousness).

B. Rejection of Claims 19-20

Claim 19 is canceled and the rejection is moot. For the same reasons discussed above, claim 20 is not rendered obvious. Ohno concerns the problem associated with recrystallization in CD-RW discs. The present invention is associated with the problem of increasing reflectance or stabilizing reflectance to reduce jitter. Ohno at best teaches that a wavelength of 630 to 660 nm is used to irradiate the disk for recrystallization. It suggests nothing about using this wavelength to combat reflectance. In fact that section recited by the Examiner specifically

suggests that the wavelength is chosen to provide the groove depth desired, not hone reflectance. (see col. 19, lines 5-20: "For this purpose, it is necessary to make the groove depth shallow ...").

Accordingly, there would be no motivation to modify the 630 to 600 nm range because that modification would be directed to combating recrystallization, not reflectance. The artisan would be taught away from using Ohno's disclosed range.

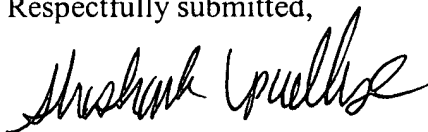
C. Rejection of claims 21 to 24

For the same reasons above, the difference is the presence of Ti as a metal in the alloy. The choice of Ti metal and in the claimed proportion is not fairly taught by the cited art.

Conclusion

The applicants respectfully request withdrawal of the rejections and believes that the claims as presented represent allowable subject matter. But if the Examiner desires, the applicant is ready for a telephone interview to expedite prosecution. As always, the Examiner is free to call the undersigned at 312-876-2622. The Examiner's attention is also drawn to the new correspondence address.

Respectfully submitted,



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